

**DRAWING AMENDMENTS**

Please add arrows to each of the rings in Fig. 1 as shown in the enclosed annotated sheet, and a new set of replacement drawings.

## **REMARKS**

Independent claims 43 and 56 were amended to respectively incorporate claims 44 and 57. The dependency of claims 46- 49 and 52 was amended to be dependent on claim 43. Moreover, the dependency of claims 59-62 and 65 was amended to be dependent on claim 56.

Amended independent claims 43 and 56 now explicitly recite switchable waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point. Contrary to the Examiner's assertion, Fatehi, et al. neither teaches nor guides a reader to such an arrangement.

The present invention as defined by independent claims 43 and 56 concerns an optical communication system comprising first and second optical paths for guiding respective information-bearing optical radiation partitioned into the same plurality of wavebands (i.e., WDM wavelength channels). The system includes switchable interfacing means for selectively communicating at least one radiation component corresponding to a selected waveband from the first path to the second path. The interfacing means includes in the first path switchable waveband selective diverting means which is operable to selectively divert the at least one radiation component from the first path to an entry point in the second path for guidance away from the entry point along the second path. The system further comprises switchable waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point. The waveband selective coupling means enables a further selection of which of the component(s) that have been diverted from the first path is/are to be coupled into the second path through the entry point. Finally the interfacing means comprises switchable waveband selective attenuating means for selectively blocking components of the second radiation corresponding to the selected

waveband(s) coupled at the entry point to avoid problems of waveband contention (two radiation components having the same waveband) in the second path.

In a preferred implementation the waveband selective diverting means (claim 45), coupling means (claim 46) and/or attenuating means (claim 47) respectively comprise waveband selective filtering means for spatially separating the components of the radiation and liquid crystal attenuating means associated with each ray for selectively blocking/transmitting radiation corresponding to the waveband of the ray.

The Examiner asserted that claims 43-44, 48, 54, 56-57, 61 and 67 are anticipated by U.S. Patent No. 6,067,389 to Fatehi, et al.; the applicants respectfully disagree. Claims 43 and 56 have been amended by this response and now incorporate the features of claims 44 and 57 respectively. It is acknowledged that Fatehi, et al. discloses an optical communication system, comprising:

- a) a first optical path (fibers 106, 125, 108 in Fig. 1) for guiding information-bearing, first optical radiation partitioned into a plurality of wavebands;
- b) a second optical path (fibers 107, 126, 109) for guiding information-bearing, second optical radiation partitioned into the same plurality of wavebands; and
- c) switchable interfacing means (optical switch 100) for selectively communicating at least one component of the first radiation corresponding to a selected waveband from the first path (fiber 125) to the second path (fiber 109), the interfacing means including
  - i) switchable waveband selective diverting means in the first path (switchable fiber gratings 105A), for selecting and diverting said at least one component of the first radiation corresponding to said selected waveband from the first path to an entry point (port 118 of

circulator 104) in the second path for guidance away from the entry point along the second path (fiber 109), and

ii) switchable waveband selective attenuating means in the second path (switchable fiber gratings 105B) upstream of the entry point, for selectively blocking at least one component of the second radiation corresponding to said at least one selected waveband coupled at the entry point.

However, contrary to the Examiner's assertion the circulator 101 of Fatehi, et al. (Fig. 1) is not a switchable waveband selective coupling means but rather a part of the switchable waveband selective diverting means. In Fatehi, et al. the optical circulator 101 in conjunction with the switchable fiber gratings 105A comprise an optical router portion 150 for selecting which wavelengths of the input signal  $I_1$  are to be coupled (connected) into the second optical path. All wavelength components which have been selected and reflected by the fiber gratings 105A are coupled by the circulator 101 into an optical fiber 127 and are all in turn then coupled into the second path (fiber 109) by a further circulator 104. Each of the circulators 101, 104 is a directional optical transfer device (col. 3, lines 34-37) and is in no way switchable or waveband selective.

Moreover referring to the alternative embodiment shown in Fig. 2A of Fatehi, et al., star couplers (201, 204) are used in place of optical circulators and are such that an optical input received at its input is broadcast to all outputs (col. 6, lines 1-5). Because the entire wavelength signal is broadcast on all outputs of the corresponding star coupler, further switchable fiber gratings 210B have to be provided in the optical fiber 206 to select which wavelength/s are to be coupled from the first optical path to the second optical path (col. 3, lines 33-40). Again Fatehi, et al. is silent

to switchable waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point.

Accordingly, it is submitted that each of independent claims 43 and 56 is novel over Fatehi, et al. It is further submitted that claims 45-55 and 58-68 are novel by their dependence on claims 43 and 56 and by virtue of the additional features they recite.

In response to the drawing objection of claims 53, 66, please refer to the accompanying annotated sheet of Fig. 1, wherein bi-directional arrows, as shown in red, were added to each ring. Thus, as shown in Fig. 2, the ring 20 includes a first path 200 in which a signal travels in one direction around the ring, and a second path 210 in which a signal travels in an opposite direction around the ring. Entry of the replacement drawings is respectfully requested.

Petition is hereby made for a two-month extension of the period to respond to the outstanding Official Action to August 10, 2005. A check in the amount of \$450.00, as the Petition fee, is enclosed herewith. If there are any additional charges, or any overpayment, in connection with the filing of the amendment, the Commissioner is hereby authorized to charge any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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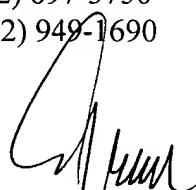
  
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Fig. 1.

